

## **ME 080 Junior Design – How the course will meet the Certification Criteria for Serving Society**

Criteria #1: identify theological motivations for service; the needs of the population being served; the effects and affects resulting from those needs; and the causes of those needs, such as involuntary circumstances, individual choices and structural injustices.

How ME 0890 addresses the criteria:

This course will provide an opportunity for our Westmont engineering students to design products, processes and services for stakeholders in under-resourced cultures. Note in the course description from the syllabus, that this will be a “technical service-oriented project” and that the class “will involve work in small design teams and will necessitate working to gain deep understanding of, and empathy for, those we are designing for”. This is reinforced in the Course Learning Outcomes as indicated by:

- outcome #2: “accurately design products, process and systems to help stakeholders”,
- outcome #3: “accurately design products, processes & systems to accomplish a set of design requirements and describe impact of advances of technology in society
  - Address the role we can play in design of products to help people
  - Address the wonder and beauty of the intricacy of design for service to others
  - an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors”

Criteria #2: articulate how they have been affected by their experience (for example, changes in beliefs, attitudes or values) and how their experiences might inform their calling to discipleship, citizenship and future service

How ME 0890 addresses the criteria:

The course mandates that students communicate their design technically and, in addition, provide details on how the design will impact the stakeholders. This will be done iteratively throughout the course with the goal being to co-create the designs with the stakeholders. Final communication, both verbally and written, is done through final design briefs and a final design report. This aligns with the Course Outcome #4: “Students will be able to communicate their design process and decisions to others; gaining insight to iteratively improve their design.” The final design report will require that students provide a section on self-reflection including how they see their engineering design experience integrating with their ideas of faith and citizenship.